

655. *Aroa tomisa*.

Aroa tomisa, Druce, Ann. & Mag. Nat. Hist. (8) xvii. p. 353 (1896).

Type, ♂, Dar-es-Salaam, in Coll. Joicey.

656. *Aroa sulphurea*.

Aroa sulphurea, Plötz, Stett. ent. Zeit. xli. p. 84 (1880); Mösch. Abhandl. Senck. Ges. xv. p. 75, fig. 10 (1887); Kirby, l. c. p. 463.

W. Africa.

657. *Aroa* (?) *xanthospila*.

Aroa xanthospila, Plötz, l. c.

Aroa (?) *xanthospila*, Kirby, l. c.

W. Africa.

[To be continued.]

VII.—*New or little-known Tipulidæ (Diptera).*—XIII. *Australasian Species.* By CHARLES P. ALEXANDER, Ph.D., F.E.S., Amherst, Massachusetts, U.S.A.

THE new species described in this paper are all from New Zealand and were collected by Messrs. Curtis, Fenwick, Harris, and Howes, to whom the writer's sincere thanks are due for the privilege of retaining the types.

Dicranomyia seducta, sp. n.

Head grey; disk of mesonotal præscutum and the scutal lobes brownish black; wings with a faint brownish tinge; stigma oval, pale brown; vein *Sc* long; spines on rostrum of male hypopygium heteromorphous.

Male.—Length 5 mm.; wing 5.7 mm.

Female.—Length 6.5 mm.; wing 6.5 mm.

Rostrum reddish brown, nearly as long as the head; palpi dark brown. Antennæ brownish black. Head grey.

Pronotum dark brown. Mesonotal præscutum obscure brownish yellow with three confluent, subshiny, brownish-black stripes; scutal lobes brownish black; remainder of the mesonotum brown. Pleura pale brownish testaceous. Halteres dark brown, the basal half of the stem yellow. Legs with the coxæ concolorous with the pleura; trochanters

yellow; remainder of the legs dark brownish black, the femoral bases very narrowly pale. Wings faintly tinged with brown; stigma oval, pale brown; veins dark brown. Venation: Sc long, Sc_1 ending beyond mid-length of Rs , Sc_2 from once to twice its length from the tip; inner ends of cells R_3 and 1st M_2 arcuated, especially the former; basal deflection of Cu_1 at or beyond the fork of M .

Abdominal tergites dark brown; basal sternites obscure yellow, the terminal sternites passing into dark brown. Male hypopygium with the spines of the rostrum of two sizes and shapes, the elongate one arising from a small papilloid base. Ovipositor with slender valves.

Hab. New Zealand (North Island).

Holotype, ♂, Ohakune, altitude 2060 feet, December 25, 1921 (*T. R. Harris*).

Allotopotype, ♀.

Paratopotype, ♂; *paratype*, ♂, Taumarunui, December 12, 1921 (*T. R. Harris*).

Rhamphidia harrisi, sp. n.

General coloration shiny black; pleura silvery grey; wings subhyaline with a broad seam along the cord and the apex brown.

Female.—Length, excluding rostrum, 8 mm.; wing 7.8 mm.; rostrum alone, about 0.9 mm.

Rostrum black, pale beneath; palpi dark brown. Antennæ black, the incisure between the scape and flagellum obscure yellow. Head black, sparsely silvery pruinose.

Pronotum with a pubescent pruinosity. Mesonotal præscutum and the scutal lobes shiny black; median area of scutum and the scutellum pollinose; postnotum dark, the basal half pruinose. Pleura shiny black with a conspicuous, silvery-grey, pubescent pruinosity, the sternum glabrous. Halteres yellow, the knobs darker. Legs with the fore coxæ black, grey pruinose; other coxæ obscure yellow; trochanters obscure yellow; femora testaceous yellow, the tips broadly dark brown; remainder of the legs black. Wings subhyaline; a faint brown cloud at arculus; a broad seam along the cord from the stigma, completely traversing the wing; wing-tip broadly infuscated, the area basad of it completely encircled by brown; veins black. Venation: cell R_1 about one-half wider at the wing-margin than cell R_3 ; cell 1st M_2 gently narrowed distally; m about one-third the outer

deflection of M_3 ; basal deflection of Cu_1 about two-thirds its length beyond the fork of M ; prearcular cells large.

Abdominal tergites indistinctly bicolorous, dark brown, the segments obscure yellow sublaterally and less distinctly along the caudal margins; basal sternites more or less yellowish; subterminal sternites uniformly black. Ovipositor with the valves horn-coloured.

Hab. New Zealand (North Island).

Holotype, ♀, Ohakune, altitude 2060 feet, December 1, 1921 (*T. R. Harris*).

Rhamphidia harrisi is named in honour of the collector, Mr. T. R. Harris, to whom I am indebted for many favours. It is the first true *Rhamphidia* to be described from New Zealand, the *Rhamphidia levis*, Hutton, being a species of *Ceratocheilus*.

Molophilus hilaris, sp. n.

General coloration pale brownish yellow; legs yellow, variegated with black; wings grey, the costal region yellowish, the disk traversed by three dark bands; distal pleural appendage of male hypopygium bifid.

Male.—Length about 2.2 mm.; wing 2.6 mm.

Rostrum and palpi pale brown. Antennæ short, pale brown throughout, with long verticils. Head pale brownish yellow.

Mesonotum uniformly pale brownish yellow. Pleura more uniformly yellowish. Halteres pale. Legs with the coxæ and trochanters yellow; femora yellow, the tips black; tibiæ yellow, the tips black; hind tibiæ at from one-third to one-fourth the length with a black ring; tips of the basal tarsal segments dark; terminal two tarsal segments uniformly dark; the legs are provided with a conspicuous erect trichiation which is coloured as described above. Wings grey, the costal region conspicuously yellowish; dark cross-bands on the wing are produced chiefly by conspicuous, dark brown macrotrichiæ; a band at the origin of R_s ; a second at the cord; the third at the wing-apex; along the medial veins the dark coloration continues more basad, so the dark areas are more or less connected; vein 2nd A with dark macrotrichiæ; veins yellow, darker in the infuscated areas. Venation: basal section of R_{2+3} short.

Abdomen yellow. Male hypopygium with the basal pleural appendage straight, slightly curved at the tip; distal appendage deeply bifid; apex of pleurite a slender spine.

Hab. New Zealand (North Island).

Holotype, ♂, Ohakune, altitude 2060 feet, January 24, 1922 (*T. R. Harris*).

Molophilus hiliaris bears a slight resemblance to *M. variegatus*, Edwards, in the coloration of the legs and wings. It is more closely related to *M. cruciferus*, *M. plagiatus*, and allied forms.

Molophilus flavidulus, sp. n.

Size small (wing of ♂ 3 mm.) ; general coloration light yellow ; male hypopygium with the basal pleural appendage gently curved toward apex, terminating in a few large teeth.

Male.—Length about 2.4 mm. ; wing 3 mm.

Rostrum and palpi pale brown. Antennæ with the first segment yellow, the second pale brown ; flagellum broken. Head light yellow.

Mesonotum and pleura light yellow. Halteres pale yellow, covered with appressed white setæ. Legs yellow, the terminal segments darker. Wings relatively broad, pale yellow with pale veins and macrotrichiæ. Venation : vein 2nd *A* elongate, ending beyond the level of the fork of *Rs*.

Abdomen yellow. Male hypopygium with the basal pleural appendage pale at base, the apex blackened, the appendage straight, at the tip curved a little mesad and here provided with a few apical teeth and less distinct appressed subapical denticles ; distal pleural appendage bifid and blackened at apex, the lateral arm dilated at outer end.

Hab. New Zealand (North Island).

Holotype, ♂, Ohakune, altitude 2060 feet, January 18, 1922 (*T. R. Harris*).

Molophilus luteipennis, sp. n.

Size large (wing of ♂ over 5 mm.) ; general coloration light reddish yellow ; wings strongly tinged with yellow ; anal veins convergent ; basal pleural appendage a strongly curved black spine.

Male.—Length about 4.4 mm. ; wing 5.3 mm.

Rostrum and palpi pale brown. Antennæ short, pale brown. Head dull grey.

Mesonotum and pleura uniformly reddish yellow. Halteres yellow. Legs with the coxæ and trochanters yellow ; remainder of the legs yellow, the terminal tarsal segments darker. Wings broad, strongly tinged with yellow, the

veins slightly darker yellow; macrotrichiæ pale brown. Venation: petiole of cell R_4 short; petiole of cell M_3 about one and two-thirds the length of the basal deflection of Cu_1 ; vein 2nd A elongate, sinuous, the anal veins convergent.

Abdominal tergites pale brown, the sternites light yellow. Male hypopygium with two pleural appendages, the basal appendage a strongly curved black arm, the base straight, the distal third bent at a right angle and directed laterad, acute at apex, before which are borne a few weak setæ; distal pleural appendage bifid at apex, the lateral arm larger and weakly denticulate at apex.

Hab. New Zealand (South Island).

Holotype, ♂, Otago (*Geo. Howes*).

Molophilus denticulatus, sp. n.

General coloration obscure yellow; antennæ short; wings pale brownish subhyaline; anal veins convergent; basal pleural appendage of hypopygium a straight black rod that bears a conspicuous erect spine on the lateral face before the apex.

Male.—Length about 4 mm.; wing 4.6 mm.

Rostrum and palpi brown. Antennæ short, pale brown, the basal segments tinged with reddish, this latter condition probably abnormal. Head pale brown.

Mesonotum obscure yellow. Pleura brownish yellow; sternum yellow. Halteres pale. Legs with the coxæ and trochanters concolorous with the sternum; remainder of the legs pale brown, the femoral bases paler. Wings pale brownish subhyaline, the veins slightly darker, with brown macrotrichiæ. Venation: anal veins convergent.

Abdomen brownish yellow. Male hypopygium with two pleural appendages, the two pairs of either side approximated; the more basal appendage a powerful black rod that is almost straight, at about three-fourths the length on the lateral face with an erect black spine; between this spine and the subacute apex, on the mesal face, a small setiferous area, the apex slightly twisted; distal pleural appendage bifid; apex of pleurite a high blackened blade.

Hab. New Zealand (South Island).

Holotype, ♂, Otago (*Geo. Howes*).

Paratype, ♂, Queenstown, Otago, altitude 1500 feet, February 15, 1922 (*L. Curtis*).

The paratype is slightly smaller than the type.

Molophilus quadrifidus ohakunensis, subsp. n.

Male.—Length about 4 mm. ; wing 4·6–4·8 mm.

Generally similar to *M. quadrifidus*, differing as follows:—

Male hypopygium with the lateral and mesal arms much more compact, the lateral arm very powerful, the outer margin microscopically serrulate ; the lateral and mesal arms are separated only by a small oval notch ; the median arm terminates in two small laterally-directed points ; the basal arm is shorter and more densely provided with setæ. Distal pleural appendage with the apex more abruptly truncate.

Hab. New Zealand (North Island).

Holotype, ♂, Ohakune, altitude 2060 feet, February 9, 1922 (*T. R. Harris*).

Paratopotype, 1 ♂, March 10, 1922 ; *paratype*, 1 ♂, Taihape, March 1, 1922 (*T. R. Harris*).

Molophilus brevinervis, sp. n.

General coloration pale brown ; antennæ of male elongate ; petiole of cell R_4 elongate ; vein 2nd *A* short ; mesal pleural appendage of hypopygium with a long, straight, lateral spine.

Male.—Length about 3 mm. ; wing 4·2 mm.

Rostrum and palpi brown. Antennæ of the male elongate, brown ; when entire at least as long as the body, the flagellar segments with conspicuous erect setæ. Head pale brown.

Mesonotum uniformly pale brownish testaceous. Pleura pale brownish yellow. Halteres dark brown, the base of the stem paler. Legs with the coxæ and trochanters concolorous with the pleura ; remainder of the legs pale brown with the terminal tarsal segments darker. Wings tinged with pale brown, the veins darker with dark brown macrotrichia. Venation : petiole of cell R_4 one-third longer than the petiole of cell M_3 ; basal deflection of Cu_1 arcuated near mid-length, situated on R_3 a short distance beyond the fork of *M* ; vein 2nd *A* short and straight, ending far before the fork of *Cu*, the cell 2nd *A* being long and narrow.

Abdomen brown, the hypopygium a trifle brighter. Male hypopygium with two appendages, both basal in position ; lateral appendage a powerful black hook, strongly curved at apex ; mesal appendage deeply bifid, the lateral arm appearing as a very long straight spine, the mesal arm as a

powerful flattened blade ; apex of pleurite chitinized and terminating in a few teeth.

Hab. New Zealand (North Island).

Holotype, ♂, Ohakune, altitude 2060 feet, December 22, 1921 (*T. R. Harris*).

Molophilus sepositus, sp. n.

General coloration brown, the præscutum dark brown with three paler brown stripes ; pleura dark brown ; antennæ short ; male hypopygium with the bifid pleural appendage having the lateral arm very small, spine-like, and remote from the tip of the mesal arm.

Male.—Length about 2·6 mm. ; wing 3·2 mm.

Rostrum and palpi dark brown. Antennæ short, pale brown, the flagellar segments with very conspicuous erect white setæ. Head brown.

Pronotum brown. Mesonotal præscutum dark brown with three lighter brown stripes ; remainder of the mesonotum light brown, the postnotum darker brown beyond the base. Pleura uniformly dark brown. Halteres pale yellow. Legs with the coxæ and trochanters brownish testaceous ; remainder of the legs yellow, the terminal tarsal segments darker. Wings tinged with greyish brown, the base and costal region a little more yellowish ; veins pale brown with dark macrotrichia. Venation : vein 2nd *A* ending opposite the fork of *Cu*.

Abdomen dark brown, the hypopygium obscure brownish yellow. Male hypopygium with the pleurites short, the lateral apical angle produced caudad into a long fleshy lobe that juts caudad beyond the appendages ; pleural appendages two, arising close together at the base of the fleshy lobe ; one appendage simple, gently curved, broad at base, narrowed to the long apex ; second appendage bifid, the lateral arm being a small, slender spine remote from the tip of the mesal arm which terminates in a small cylindrical point. Gonapophyses appearing as two long, straight, divergent arms, gradually narrowed to the acute tips, their surface sparsely provided with appressed setæ.

Hab. New Zealand (North Island).

Holotype, ♂, Ohakune, altitude 2060 feet, December 22, 1921 (*T. R. Harris*).

Molophilus paululus, sp. n.

General coloration dark brown ; vein 2nd *A* short ; male

hypopygium with a single pleural appendage—this flattened, ear-shaped, and terminal in position.

Male.—Length about 2·6 mm.; wing 3·2 mm.

Female.—Length about 3 mm.; wing 3·3 mm.

Rostrum and palpi pale brown. Antennæ with the first segment pale brown, the second segment darker; flagellum broken. Head dark brown.

Pronotum dark brown. Mesonotum dark brown, the humeral region brighter. Pleura dark brown. Halteres dark brown, the extreme base obscure yellow. Legs with the coxæ and trochanters obscure yellow; remainder of the legs black; only the middle legs remain, and these show faint indications of narrow pale rings on the tibiæ and tarsi, possibly due to the removal of trichiæ. Wings tinged with brown, the veins a little darker and clothed with long, dark brown macrotrichiæ. Venation: vein *2nd A* short, ending some distance before the level of the fork of *Cu*.

Abdomen dark brown. Male hypopygium with the pleurites short and stout; a single pleural appendage—this terminal in position, flattened, ear-shaped, pale yellow in colour. Penis-guard and apophyses forming a chitinized mass between the pleurites, the guard jutting caudad as two slender parallel points.

Hab. New Zealand (North Island).

Holotype, ♂, Ohakune, altitude 2060 feet, January 18, 1922 (*T. R. Harris*).

Allotopotype, ♀.

Molophilus paululus is related to *M. gourlayi*, Alex.

Rhabdomastix (Sacandaga) optata, sp. n.

General coloration grey, the præscutum with two submedian brown stripes; pleura dark grey; wings whitish subhyaline, handsomely variegated with brown, the costal region more yellowish; abdominal segments pale brown, the bases of the segments darker brown.

Male.—Length about 4·8 mm.; wing 6 mm.

Female.—Length 6·8 mm.; wing 7·2 mm.

Rostrum and palpi dark brown. Antennæ dark brown throughout, the flagellar segments with an abundant, erect, white pubescence. Head grey.

Mesonotum dull grey, the præscutum with two submedian brown stripes; in the female, the lateral stripes are also indicated. Pleura dark grey. Halteres pale. Legs with the fore coxæ dark, the other coxæ obscure brownish

yellow; trochanters yellow; fore and middle coxæ elongate; remainder of the legs brown. Wings whitish subhyaline, the costal region more yellowish; stigma dark brown, sending a conspicuous brown cloud along the cord to $r-m$, wing-tip faintly darkened; other brown clouds in the base of cells C and Sc , along vein Cu , the outer end of cell 1st M_2 ; cell 2nd A largely dark; prearcular region abruptly pale; veins dark brown, paler in the costal region. Venation: Sc_1 ending about opposite three-fourths the length of Rs , Sc_2 not far from the tip; R_2 short, a little more than its length from the tip of R_1 ; basal deflection of Cu_1 about two-thirds its length beyond the fork of M . No macrotrichiæ on veins R_{2+3} or 2nd A .

Abdomen indistinctly bicolorous, pale brown, the bases of the segments darker brown; subterminal segments uniformly darkened; hypopygium obscure yellow. Valves of the ovipositor elongate, horn-colour.

Hab. New Zealand (North Island).

Holotype, ♂, Ohakune, altitude 2060 feet, January 24, 1922 (*T. R. Harris*).

Allotopotype, ♀, February 8, 1922.

Rhabdomastix (Sacandaga) vittithorax, sp. n.

General coloration yellow, the mesonotal præscutum with four brown stripes; head grey; wings tinged with grey; Sc ending opposite two-fifths the length of Rs ; macrotrichiæ on veins R_{2+3} and 2nd A .

Female.—Length 4.2 mm.; wing 4.9 mm.

Rostrum brown, the palpi dark brown. Antennæ dark brown, the first scapal and the first flagellar segments paler. Head grey.

Pronotum yellow, slightly darker medially. Mesonotal præscutum yellow with four conspicuous brown stripes, the intermediate pair confluent anteriorly; remainder of the mesonotum yellow, the scutal lobes brown. Pleura yellow. Halteres yellow. Legs with the fore coxæ slightly darkened; other coxæ and the trochanters yellow; remainder of the legs dark brown. Wings tinged with grey, the base and costal region indistinctly yellowish; stigma faintly indicated, pale brown; veins dark brown, those in the costal area more yellowish. Venation: Sc short, Sc_1 ending opposite two-fifths the length of Rs , Sc_2 indistinct; distance between the tips of R_1 and R_2 at margin greater than R_2 alone. Macrotrichiæ on R_{2+3} basad to the fork of Rs and on vein 2nd A .

Abdominal tergites uniformly brown, the sternites paler; genital segment and ovipositor paler. Abdomen of type gravid with large eggs.

Hab. New Zealand (North Island).

Holotype, ♀, Ohakune, altitude 2060 feet, January 28, 1922 (*T. R. Harris*).

Rhabdomastix vittithorax is most closely related to *R. otagana*, Alex.

ZELANDOMYIA, gen. nov.

Antennæ with at least 15, probably with 16, segments, the segments with conspicuous verticils that exceed the segment in length. Legs clothed with very long, coarse setæ; tibial spurs elongate. Wings with *Sc* ending about opposite two-thirds the length of the long *Rs*, *Sc*₂ at the tip of *Sc*₁; *Rs* long, straight; *r* lacking; *R*₂₊₃ nearly as long as *R*₂ alone; *R*₂ somewhat oblique in position; cell *R*₂ wide at the wing-margin; inner ends of cells *R*₃, *R*₅, and 1st *M*₂ in oblique alignment; cell 1st *M*₂ open by the atrophy of *m*; cell *M*₁ present, but small; basal deflection of *Cu*₁ about its own length beyond the fork of *M*; vein 2nd *A* ending opposite the origin of *Rs*; arculus complete. Ovipositor with acicular valves.

Genotype, *Zelandomyia pygmæa*, sp. n. (Maorian Sub-region).

The tiny fly that is made the type of this new generic group is the smallest Hexatomine fly known, with the exception of certain species of *Polymera* which are of about the same size. Its general appearance is more like a species of *Gonomyia* than a *Limnophila*, to which genus it is most closely allied. The medial field of the wing suggests certain Pediciine Tipulidæ, such as *Dicranota* and *Rhaphidolabis*.

Zelandomyia pygmæa, sp. n.

General coloration pale brownish yellow; size very small (wing of ♀ 3.5 mm.); wings greyish yellow; cross-veins *r* and *m* lacking; vein *R*₂ oblique in position; cell *M*₁ present.

Female.—Length 3.5 mm.; wing 3.5 mm.

Rostrum and palpi pale brown. Antennæ short, testaceous. Head pale brown.

Mesonotum and pleura pale brownish yellow, unmarked. Halteres pale, the knobs large. Legs with the coxæ and trochanters yellow; remainder of the legs pale brown,

scarcely darkened distally. Wings with a faint greyish-yellow tinge; veins pale brown. Venation as discussed under the generic characterization.

Abdomen pale brownish yellow, the sternites a little paler.

Hab. New Zealand (North Island).

Holotype, ♀, Ohakune, altitude 2060 feet, January 28, 1922 (T. R. Harris).

Gynoplistia eluta, sp. n.

General coloration grey, the præscutum with three darker stripes; antennæ with seventeen segments; wings tinged with pale brown, the pattern very pale and diffuse; pleurites of male hypopygium with spinous basal lobes.

Male.—Length 12.5 mm.; wing 9.2 mm.

Female.—Length 15.5 mm.; wing 12 mm.

Rostrum pale brown, the palpi dark brown. Antennæ with the scape yellow, first flagellar segment light brown; remainder of the antennæ, including all the pectinations, black; antennal formula in ♂ 2+3+8+4, the pectinations of moderate length; formula in ♀ 2+3+6+6. Head brown, the front and orbits pruinose.

Mesonotum pale brown with three rather indistinct, darker brown stripes; pseudosutural foveæ reddish; remainder of mesonotum weakly pruinose; the scutal lobes darker. Pleura pruinose. Halteres obscure yellow, the knobs a little darker. Legs with the coxæ yellow, weakly pruinose; trochanters yellow; femora pale brown, the tips broadly yellow, enclosing a narrow brown subterminal ring; in the ♀ the femora are uniformly pale brown; tibiæ and metatarsi pale brown, the terminal tarsal segments black. Wings tinged with pale brown (♂) or yellowish brown (♀) with a very diffuse, pale brown pattern, so that at first sight the wings appear almost unicolorous; stigma oval, brown, sending a paler brown seam along the cord and outer end of cell 1st M_2 ; a pale brown spot at origin of Rs . Venation: Sc_1 ending beyond the end of Rs , Sc_2 at its tip; cell 1st M_2 relatively small, the basal deflection of Cu_1 beyond mid-length; petiole of cell M_1 two and one-half to three times m .

Abdominal tergites brown, the subterminal segments scarcely darkened; hypopygium a little paler. Male hypopygium with conspicuous, blackened, spinous, basal lobes on the mesal face of pleurites; outer pleural appendage bifid and blackened at apex, the smooth arm shorter than the denticulate arm; inner pleural appendage with an obtuse tooth near mid-length of the lower face.

Hab. New Zealand (North Island).

Holotype, ♂, Ohakune, altitude 2060 feet, December 25, 1921 (*T. R. Harris*).

Allotopotype, ♀.

Paratopotype, ♂, December 20, 1921; *paratypes*, 2 ♀ ♀, Waimarino, January 1922 (*Mr. Fenwick*).

Cerozodia hiemalis, sp. n.

Coloration in alcohol dark brown; antennæ with seventeen segments, the terminal segment elongate; wings and halteres subequal in length (in ♀).

Female.—Length 24 mm.; wing 2·5 mm.

Described from an alcoholic specimen.

Rostrum and palpi dark brown. Antennæ dark brown, with apparently only seventeen segments, the terminal segment being a composite that is as long as the preceding three taken together; the formula is 2 + 10 + 5, interpreting the terminal segment as being a unit; longest pectination about as long as the segment. Head dark brown.

Thorax dark brown, the pseudosutural foveæ pale. Halteres and wings subequal in length, pale brown, the latter slightly curved, strap-like. Legs brown, covered with conspicuous erect brown setæ.

Abdomen brown, the ovipositor passing into horn-colour. Ovipositor with the tergal valves elongate, gently upcurved.

Hab. New Zealand (North Island).

Holotype, ♀, Ohakune, altitude 2060 feet, July 1921 (*T. R. Harris*).

The reference of this fly to *Cerozodia* is somewhat provisional, and it may prove to belong to *Gynoplistia* when the male sex is discovered.

Macromastix longioricornis, sp. n.

Male.—Length 11·5–12 mm.; wing 14·4–15 mm.; antenna 17–17·5 mm.

Described from alcoholic material.

Bearing a general resemblance to a small *M. binotata*, Hutton, from which it is readily told by the elongate antennæ and the coloration of the wings and abdomen.

Compared with *binotata*, the present species differs as follows:—

Antennæ of male approximately one-half longer than the body. Vertical tubercle more prominent. Wings with the ground-colour yellowish grey, the ocellate spot at mid-length

of vein *M* not touching the origin of *Rs*; the band along the cord that occurs in *binotata* is here much broken up, represented chiefly by a vague clouding cephalad of *r-m* and a conspicuous dark brown spot at the fork of *Cu*. Venation: cell 1st *M*₂ more elongate; cell *M*₁ short-petiolate to sessile. Second abdominal segment not yellow on the basal half.

Hab. New Zealand (North Island).

Holotype, ♂, Ohakune, altitude 2060 feet, July 1921 (*T. R. Harris*).

Paratopotypes, 8 ♂♂, with the type; 1 ♂, May 17, 1922; *paratype*, 1 ♂, Owhango, July 1, 1922 (*T. R. Harris*).

Macromastix halterata, sp. n.

General coloration dark brown; antennæ short; halteres very long; wings strongly tinged with brown; basal deflection of *Cu*₁ far before the fork of *M*; abdominal sternites bicolorous.

Male.—Length 7 mm.; wing 8.3–8.5 mm.

Described from alcoholic material.

Frontal prolongation of the head short, light brown; nasus lacking; palpi short, pale brown. Antennæ short, pale brown, the basal flagellar segments narrowed basally, a little produced apically on the ventral face, the terminal five segments elongate, cylindrical or nearly so, gradually becoming more elongate to the end. Head dark brown, the anterior part of the vertex paler.

Mesonotal præscutum dark brown with three yellowish-brown stripes, the medial stripe further subdivided by a capillary dark vitta; remainder of mesonotum brown. Pleura obscure brownish yellow, with no distinct markings. Halteres very long and slender (2.5 mm.), brown. Legs with the coxæ concolorous with the pleura; trochanters a little darker; remainder of the legs dark brown, the extreme femoral bases paler. Wings with a strong dark brown tinge, the stigma even darker brown; obliterative areas before the stigma and across the base of cell 1st *M*₂. Wing-base subpetiolate, so the basal half of cell 2nd *A* is very narrow. Venation: cell 2nd *R*₁ small; petiole of cell *M*₁ variable, from about equal to *m* to almost lacking; basal deflection of *Cu*₁ before the fork of *M*, the fusion variable, from about equal to *m* to almost at the fork of *M*; fusion of *M*₃ and *Cu*₁ about equal to the fusion of *M* and *Cu*₁.

Abdominal tergites dark brown, the sternites yellow, with the bases of the segments narrowly infuscated.

Hab. New Zealand (North Island).

Holotype, ♂, Ohakune, altitude 2060 feet, July 1921 (*T. R. Harris*).

Paratopotypes, 6 ♂♂, with the type; 9 ♂♂, May 21, 1922; 3 ♂♂, May 28, 1922 (*T. R. Harris*).

Macromastix angusticosta, sp. n.

General coloration grey, the præscutum with three dark brown stripes, the median one fulvous at anteriorend; wings subhyaline, cells *C* and *Sc* dark brown; abdominal tergites deep reddish brown, the lateral margins broadly pale.

Male.—Length about 15 mm.; wing 18.4 mm.

Frontal prolongation of the head brown, darker brown beneath, the nasus very short and broad; palpi dark brown. Antennæ short, the first segment yellow, the second segment pale brown; flagellum dark brown. Head brown, dark brown on the genæ, fulvous on the low vertical tubercle and on the orbits, the vertex when viewed obliquely with a silvery sheen.

Mesonotal præscutum light brownish grey with three velvety dark brown stripes, the median stripe fulvous-orange anteriorly, forming a very conspicuous triangular area; median stripe indistinctly split by a pale line; humeral region and lateral margins light yellow; scutal lobes obscure orange, the median area broadly pruinose; a small brown spot on latero-caudal portion of each scutal lobe; scutellum obscure fulvous, sparsely pruinose, the lateral margins of the median lobe greenish yellow; postnotum brown, paler caudally, the surface sparsely pruinose. Pleura dark brown, sparsely pruinose, with a broad, ventral, longitudinal, grey stripe. Halteres brown, the knobs greenish. Legs with the coxæ pruinose; trochanters obscure yellow; femora light yellowish brown, the tips conspicuously but rather narrowly blackened; tibiæ uniformly yellowish brown; tarsi similar, the terminal segments black; legs elongate. Wings subhyaline, cells *C* and *Sc* dark brown; wing-base, before the arculus, tinged with yellowish brown; stigma conspicuous, dark brown, preceded and followed by indistinct yellowish areas; veins dark brown, slender. Venation: cell 2nd *R*₁ small, rectangular; petiole of cell *M*₁ shorter than *m*; *m-cu* obliterated by fusion; cell 2nd *A* moderately broad.

Abdominal tergites deep reddish brown, the lateral margins broadly whitish, this coloration decreasing in extent

distally, margined internally by a deep blackish area; sternites uniformly dark brown, the hypopygium more reddish brown.

Hab. New Zealand (North Island).

Holotype, ♂, Ohakune, altitude 2060 feet, December 23, 1921 (*T. R. Harris*).

VIII.—*A Note on the Species as a Gene-complex.*

By GUY C. ROBSON, M.A.

UP to the present no very satisfactory solution of the "species question" has been offered by the geneticist. He has indeed supplied some very just criticisms of the taxonomist's attitude towards the "species," particularly on the question of their origin; but he has nevertheless produced no constructive solution of the problem. The effect of genetic studies in the field of taxonomy has been, in fact, similar to that of the Selection theory. Bateson has pointed out (I, p. 10) the falsification of Darwin's prediction that, when his interpretation was adopted, "the disputes whether or not some fifty species of British brambles are good species or not will cease," only to admit on another page (*l.c.* p. 3), "I cannot assert that we are already in a position to answer this important question" (What is a species?).

In the following note I venture to indicate a method by which at least some precision might be introduced into the discussion. I do not wish to claim originality for these views. They are partly a restatement in a different terminology of those held by other people. I venture to think that such a restatement is necessary at the present time.

We are offered two mutually exclusive views on the nature of species. One is that a species is a purely arbitrary association of individuals agreeing in respect of certain characters, an association justifiable on pragmatical grounds as affording a working basis for the task of classification. The other view is that the species is a biological reality, though no means at present are available for arriving at a satisfactory criterion or of unifying the species-concept as it is applied to the various groups of animals and plants. A number of suggestions have been made as to what such a criterion might